

A REMARKABLE SPRUCE RUST, *PERIDERMIMUM*
PARKSIANUM, N. SP.

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A spruce rust of exceptional interest from western North America has been brought to light in collections made by Mr. Harold E. Parks on *Picea sitchensis* Carr. The rust is a *Peridermium* and its spermogonia indicate that it is the haploid phase of a species of *Melampsoropsis*. But whatever its diploid phase may prove to be its spermogonial and aecial characters are sufficiently distinctive to separate it easily from other known spruce rusts. Hence, even though the name proposed, *Peridermium Parksianum*, will be superseded by the name of the diploid phase when the latter is determined, in accordance with the accepted nomenclatorial rules, there is ample justification for formal designation of the haploid phase. The most striking characters are those manifested by the spermogonia and the aeciospores. The former are triangular in vertical section and broad-based, resembling tiny Erlenmeyer flasks. Most of the aeciospores are elongated, commonly so much so as to be properly described as linear. Often they are somewhat curved and their tips are tapered, the shape suggesting that of a slightly curved *Closterium*. Occasional spores are even slightly sigmoid.

This rust is restricted to needles of the current season and is often very abundant. The lesions caused by it may involve entire needles or limited portions only; they are somewhat lighter green than normal by the time the spermogonia first appear, but eventually they are straw-colored. The spermogonia form in late spring or early summer. Specimens collected June 29, 1933 carry an abundance of spermogonia from which there is a copious outpouring of the globular to broadly ellipsoidal spermatia, still being actively produced (apparently catenulately) from the elongated, unbranched spermatophores that crowd the interior of the spermogonia. The peridermia develop slowly. First signs of them in 1933 were evident August 25 but they were not mature until the middle of September or later. They occur over a comparatively long period. The earliest collection in my herbarium bears the date September 21 and the latest November 23, the latter carrying many of the yellow-orange aecia still unruptured.

I have attempted to culture the rust on *Rhododendron californicum*

Hook., which appears to be a likely host, but so far without success. The negative results cannot, however, be accepted as final because difficulty has been encountered in securing germination of the aeciospores.

Peridermium Parksianum is reported from Trinidad, California and Florence, Oregon. The description of the spermogonia given below is based on a collection (Herb. J. H. Faull, no. 11,076) from Trinidad, California made June 29, 1933; the description of the peridermia is based on material (no. 11,002; Herb. H. E. Parks, no. 4052) collected October 15, 1932 from the same locality and checked against materials collected likewise at Trinidad November 23, 1933 (no. 11,592) and September 24, 1933 (no. 11,540). All collections were made by Mr. Harold E. Parks, and the species is named in his honor.

Peridermium Parksianum Faull, n. sp.

Pycnidia hypophylla, numerosa in foliis hornotinis, biseriata, conspicua, immersa, parum prominula, mellea, dein rufo-brunnea, in facie verticali triangula, subepidermalia, 228-315 μ lata et 125-155 μ alta, plus minusve 260 \times 140 μ ; spermatia globosa vel ellipsoidea, 2.7-3.2 \times 3.0-5.0 μ . Aecidia hypophylla, in foliis hornotinis, irregulariter biseriata, maculis flavis insidentia, cylindracea vel lateraliter compressa, 0.4-1.2 mm. longa et 1.0-2.2 mm. alta, ad apicem dehiscentia; cellulae peridii albae, subimbricatim positae, 18-26 \times 48-88 μ , pariete exteriori levi, 0.7-1.0 μ crasso, interiore dense et subtiliter verrucoso, circa 1.5 μ crasso; aecidiosporae fusiformes vel anguste ellipsoideae, rarius subglobosae, rectae vel curvulae, flavae, 13-24 \times 25-111 μ , praecipue fusiformes et plus minusve 16 \times 70 μ , dense et subtiliter verrucosae, episporio circa 1 μ crasso.

Hab. in foliis *Piceae sitchensis* in California et Oregon Americae bor.

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